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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/608,624	06/30/2000	Stephen Jourdan	2207/8609	9451

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EXAMINER

TSAI, HENRY

ART UNIT	PAPER NUMBER
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2183

DATE MAILED: 10/22/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/608,624

Applicant(s)

JOURDAN ET AL.

Examiner

Henry W.H. Tsai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 9-27 is/are pending in the application.
- 4a) Of the above claim(s): _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4-7 and 9-19, and 23-27 is/are allowed.
- 6) ☒ Claim(s) 1-3 and 20-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/4/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 04 September 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All. b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-3 and 20-22 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The claims recite nothing more than a nonstatutory subject matter.

Claims to computer-related inventions that are clearly nonstatutory fall into the same general categories as nonstatutory claims in other arts, namely natural phenomena such as magnetism, and abstract ideas or laws of nature which constitute "descriptive material." Abstract ideas, Warmerdam, 33 F.3d at 1360, 31 USPQ2d at 1759, or the mere manipulation of abstract ideas, Schrader, 22 F.3d at 292-93, 30 USPQ2d at 1457-58, are not patentable. Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data (See MPEP section 2106, IV, B, 1).

Note the claimed invention, a trace, is just a general term describing a physical or logical path; or a sequence of

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instructions, as defined at page 1, lines 15-17 in the specification. The examiner submits that the claims are

- 1) not tangibly embodied on a computer readable medium; and
- 2) non-functional descriptive material; data per se is non-statutory-- this claim fails to recite the necessary functional interrelationship within the architecture to constitute a data structure.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the

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reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1, 2, 20, and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Agarwal (USP 5,966,541) (Herein referred as Agarwal)

Referring to claim 1, Agarwal discloses as claimed: a trace (including blocks 101, 102 and 103 as shown in Fig. 8) having a multiple-entry (from I2 to I3 and from I2 to I5, see Fig. 8), single exit (from I9 in block 103, see Fig. 8) architecture. Note Fig. 8 is best reasonably and broadly interpreted to contain many traces such as from block 101 to block 102 and from block 102 to block 103 as shown in Fig. 8.

As to claims 2 and 21, Agarwal also discloses: the trace being a complex trace (including blocks 101, 102 and 103 as shown in Fig. 8) having multiple independent prefixes (block 101 and block 102 as shown in Fig. 8) and a common, shared suffix (block 103 as shown in Fig. 8).

Referring to claim 20, Agarwal discloses as claimed: a trace (including blocks 101, 102 and 103 as shown in Fig. 8), comprising a sequence of program instructions (from I3 to I19 see Fig. 8) stored together (in memory 703, see Fig. 11, and col. 11, line 36) as a contiguous unit, the instructions defining a

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program flow that progresses from any instruction (instructions from I3 to I18 see Fig. 8) therein to a last instruction (last instruction I19 see Fig. 8) in the trace and in which the trace has multiple separate prefixes (block 101 and block 102 as shown in Fig. 8).

Allowable Subject Matters

4. Claims 4-7, 9-19, and 23-27 are allowed.

5. The following is a statement of reasons for the indication of allowable subject matter: Agarwal, the closest references, do not teach or fairly suggest:

a front-end system comprising: the extended block cache system having a block predictor to store masks associated with the complex traces, the masks distinguishing the prefixes from each other (in claim 4);

a method of managing extended blocks, comprising the steps of: predicting an address of a terminal instruction of an extended block to be used, determining whether the predicted address matches an address of a terminal instruction of a previously created extended block (in claim 9);

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a processing engine, comprising: a front end stage to store blocks of instructions in a multiple-entry, single exit architecture when considered according to program flow (in claim 16); and

a memory comprising storage for a plurality of traces and means for indexing the traces by an address of a last instruction therein according to program flow (claim 23).

Response to Arguments

6. Applicant's arguments mailed 9/4/03 have been considered but are moot in view of the new ground(s) of rejection. As set forth in the art rejections above, Agarwal teaches the claimed invention.

Contact Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Henry Tsai whose telephone number is (703) 308-7600. The examiner can normally be reached on Monday-Thursday from 8:00 AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful,

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the examiner supervisor, Eddie Chan, can be reached on (703) 305-9712. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2100 receptionist whose telephone number is (703) 305-3900.

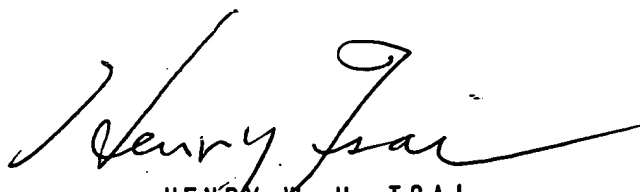
8. In order to reduce pendency and avoid potential delays, Group 2100 is encouraging FAXing of responses to Office actions directly into the Group at fax number:

Official faxes: 703-746-7239; and

After Final faxes: 703-746-7238;

Customer Service faxes: 703-746-7240.

This practice may be used for filing papers not requiring a fee. It may also be used for filing papers which require a fee by applicants who authorize charges to a PTO deposit account. Please identify the examiner and art unit at the top of your cover sheet. Papers submitted via FAX into Group 2100 will be promptly forward to the examiner.



HENRY W. H. TSAI
PRIMARY EXAMINER

October 19, 2003